IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Spall et al.	Art Unit	: 1797
Serial No.	: 10/628,072	Examiner	: Keri A. Moss
Filed	: July 25, 2003	Conf. No.	: 3044
Title	: COMBINATION MARKER FOR LIQUIDS AND METHOD IDENTIFICATION THEREOF		

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REPLY BRIEF

Pursuant to 37 C.F.R. § 41.41, Appellants respond to the Examiner's Answer mailed May 13, 2009 (the "Answer") in response to the Appeal Brief filed January 15, 2009 (the "Appeal Brief").

This Brief is necessitated by the Examiner's Response to Argument in the Answer. Appellants respectfully assert that the Examiner demonstrates continued and fundamental misunderstanding of scientific principles underlying the claimed invention and the cited art.

In Section 6 of the Answer, the Examiner contends that, regarding the definition of molecular marker, "Appellants' brief cites statements outside the definition provided in the Specification, statements that do not clarify the definition, but instead add confusion." The Examiner's assertion is unsupported and has no basis in fact. The Examiner appears to suggest that a definition of molecular marker would necessarily include an explicit statement regarding differences between a molecular marker and absorption markers. It is unclear to Appellants that definitions should include comparisons. Nevertheless, the differences between absorption markers and molecular markers are clearly described in the Application, as presented in the Appeal Brief. Appellants merely pointed to these differences in the Appeal Brief after the Examiner repeatedly ignored the distinctions between the two types of markers. The Examiner asserts: "appellant's Appeal Brief is the first time in the course of the prosecution of this application that the Examiner has heard the argument that the definition of 'molecular marker' distinguishes it from an absorption marker." Answer, at 7. This statement reveals a lack of understanding of the Application when, in fact, the Application includes statements such as: "The low reliability absorption marker allows for an efficient initial screening of the liquid being

tested to determine if the marker is inside a predetermined tolerance. The high reliability molecular marker allows for an exact determination of the concentration of marker present thus allowing an exact identification of the liquid." Specification, p. 6, ll. 2-6. Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. MPEP § 2111.01 (IV). The specification should also be relied on for more than just explicit lexicography or clear disavowal of claim scope to determine the meaning of a claim term when applicant acts as his or her own lexicographer; the meaning of a particular claim term may be defined by implication, that is, according to the usage of the term in context in the specification. *Id.* Though the pending claims must be "given their broadest reasonable interpretation consistent with the specification,"..."reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from 'reading limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." MPEP § 2111. As such, the Examiner cannot ignore the distinctions between these terms provided in the Specification.

The Examiner goes on to state: "the rejection is made not under Meyer alone, but under Meyer in view of Anderson '937." Answer, at 8. Regarding *Meyer*, the Examiner asserts: "Markers that fit within the desired range of Meyer, meaning within 600-1200 nm include alcohols such as ethanol or methanol; ethers such as dioxane; ketones such as acetone; and aliphatic or aromatic hydrocarbons such as octane, xylene (column 14 lines 55-67)." Answer, at 4. However, this assertion reveals the Examiner's fundamental misunderstanding of the spectroscopic principles underlying the absorption described by *Meyer*.

Regarding markers, *Meyer* states: "Preferred markers added in the method of the invention ... are compounds selected from the group consisting of metal-free and metal-containing phthalocyanines, metal-free and metal-containing naphthalocyanines, nickel-dithiolene complexes, aminium compounds of aromatic amines, methane dyes, squaric acid dyes and croconic acid dyes." *Meyer*, col. 4, *ll.* 18-25. As understood by one of ordinary skill in the art, *Meyer* is clearly identifying compounds that undergo electronic absorption in the range of 600-1200 nm. The Examiner's contention — that alcohols such as ethanol or methanol, ethers such as dioxane, ketones such as acetone, and aliphatic or aromatic hydrocarbons such as octane

or xylene fit within the desired range of *Meyer* — is flawed and not supported by the Examiner with objective evidence, by *Meyer*, by *Anderson '937*, or by any reasonable understanding of the art. When an examiner relies on a scientific theory, evidentiary support for the existence and meaning of that theory must be provided. MPEP § 2144.02. Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. MPEP § 2144.03 (A). It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. *Id.* If such notice is taken, the basis for such reasoning must be set forth explicitly. MPEP § 2144.03 (B). The examiner must provide specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge. *Id.* The Examiner's contention above is not correct, and is traversed by Appellants. As a result, the Examiner's basis for combining *Meyer* and *Anderson '937* is flawed. As such, a *prima facie* case of obviousness has not been established.

The Examiner further states: "Third, assuming arguendo that 'molecular marker' as defined in the Specification distinguishes between lower reliability absorption markers and higher reliability molecular markers, the combination of Meyer and Anderson '937 reads on this definition as the first marker is disclosed by Meyer and the second marker is disclosed by Anderson '937." Answer, at 8. As discussed above, the Application clearly distinguishes between lower reliability absorption markers and higher reliability molecular markers. While the Answer states that the first marker is disclosed by *Meyer* and the second marker is disclosed by *Anderson '937*, the Examiner fails to provide any rational underpinning based on clear scientific understanding of the art to support a motivation to combine *Meyer* and *Anderson '937*. As such, a *prima facie* case of obviousness has not been established.

The Examiner states: "In summary, the definition of 'molecular marker' in the instant Specification does not clearly distinguish between a lower reliability absorption marker and a higher reliability molecular marker. Therefore, Meyer alone need not teach using a combination of one lower reliability absorption marker and one higher reliability molecular marker." Answer, at 9. As discussed above, the Application clearly distinguishes between a lower reliability

absorption marker and a higher reliability molecular marker. Examiner's assertion that "Meyer alone need not teach using a combination of one lower reliability absorption marker and one higher reliability molecular marker" is therefore meaningless.

In Section 7 of the Answer, the Examiner refers to the distinction between the markers and the markable liquids of *Meyer* as entirely semantic. As discussed above with regard to Section 6, this is clearly not the case. Regarding markers, *Meyer* states: "Preferred markers added in the method of the invention ... are compounds selected from the group consisting of metal-free and metal-containing phthalocyanines, metal-free and metal-containing naphthalocyanines, nickel-dithiolene complexes, aminium compounds of aromatic amines, methine dyes, squaric acid dyes and croconic acid dyes." *Meyer*, col. 4, *ll.* 18-25. These compounds, solids at room temperature, are dyes that absorb in the 600-1200 nm region of the spectrum and re-emit fluorescent light. In contrast, the markable liquids of *Meyer* include organic liquids such as alcohols, glycols, ethers, ketones, aliphatic or aromatic hydrocarbons, natural oils and mineral oils. The Examiner's assertion that the distinction between the markers and the markable liquids of *Meyer* are "semantic" is not supported by the teaching of *Meyer*. In fact, if the distinction between the markers and markable liquids of *Meyer* were merely semantic, it is unclear how the markers would be dissolved in the markable liquids, or even detectable when surrounded by similar compounds with indistinguishable properties.

In Section 8 of the Answer, the Examiner reveals a lack of basic knowledge of organic chemistry. The Examiner states: "appellants argue that the claimed aromatic hydrocarbons are saturated while the products described by Anderson '937 are unsaturated." Answer, at 9. This statement is in error on several counts. In Section VII.B of the Appeal Brief, Appellants state: "the products described by *Atkinson* are ***saturated*** deuterated hydrocarbons — and therefore cannot be unsaturated. Since the claimed aromatic hydrocarbons are unsaturated, and the products of *Atkinson* are all saturated, the combination of the cited art does not teach or suggest a polynuclear aromatic hydrocarbon that is artificially enhanced with a non-radioactive isotope." Appeal Brief, at 10. Thus, in the Appeal Brief, the Appellants note that the products described by *Atkinson* (not *Anderson '937*) are saturated (not unsaturated), and the claimed aromatic hydrocarbons are unsaturated (not saturated). This is not an argument. Rather, this statement reflects a fundamental concept of organic chemistry. Aromatic compounds are, by definition,

unsaturated. A quick review of any reference will support this fact, such as Wikipedia or Encyclopedia Britannica. Therefore, the Examiner's assertion that "it is noted that the features upon which applicant relies (i.e., saturated), are not recited in the rejected claim(s)" is indicative of a lack of understanding of the meaning of aromaticity in organic chemistry. As such, the Examiner's statement that "[a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims" is traversed, and not applicable to claim 55.

For these reasons, and the reasons stated in the Appeal Brief, Appellants submit that the final rejection should be reversed.

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Respectfully submitted,

Date: July 13, 2009

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